

METHOD AND APPARATUS FOR PHYSICAL WIDTH EXPANSION OF A
LONGEST PREFIX MATCH LOOKUP TABLE

ABSTRACT OF THE DISCLOSURE

A lookup unit matrix combines a plurality of lookup units to provide a longest
5 prefix match for a search key longer than the lookup unit's mapper key. A portion of
the search key is provided to each of the plurality of lookup units in a single search
request issued to the lookup unit matrix. Each lookup unit in the lookup unit matrix
performs a multi-level search for the result value based on the portion of the search key
forwarded as the mapper key and the result of a multilevel search in the previous
10 lookup unit. The search results in a value corresponding to the search key stored in a
single location in one of the lookup units.